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Options competition ..... 7This is your chance to win a once-in-a-lifetime trip - a weekend fortwo in Paris
Software charts ..... 14
Find out what the new smash hits are in both arcade and non-arcadegames
classified ads start on ..... 28
PROGRAMS
48K Spectrum program .....
Here's
cricke
TI-99/4A programs ..... 24
Gobble up your food - the more you cat, the more you grow
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Puzxies and adventures ..... 20
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## NEWS

## Tapes

## From froms page

by the solicitor who carried out the order in which he said that Dr Mohamed had "readily admitted" copying Microdeal's tapes and that he had found recording equipment, blank tapes and tapes which had been copied.
Nothing, however, had been found at the boy's home.
Neither Dr Mohamed or Mr Mohsan were present or represented in court.

But Miss Vitoria said Microdea!'s solicitors had received a phone call from Dr Mohamed denying all knowledge of the matter.

The judge agreed to continue an order banning Dr Mohamed from infringing Microdeal's copyrights until a further hearing last Friday. He refused to make any order against Mr Mohsan.

## Chris

## From front page

as a freelance for Thor and he will receive royalties for Jack and the Beanstalk. His brother, Steven, helped with the graphics, an outstanding feature of the game.
Christopher came up with the idea of Jack and the Beanstalk because he thought people were getting fed up with space games and shoot-outs. Now he is going to think up some more new games.

Jack and the Beanstalk received a Tive-star rating when reviewed in Home Computing Weekly. "Frustrating but chalienging; if you want a difficult action game this can cerlainly be recommended', our reviewer wrote.

Headmaster Ken Cook says he is not worried about Christopher dropping 'A' levels and he is sure he will be a big success in computers.

## No longer in the dark

Broadway Electronics chose to herald its mushrooming expansion plans by sending mushrooms to numerous computer personalities. Halfpound punnets of fresh mushrooms were delivered to their desks following the opening of new high tech headquarters in Bedford in March. Plans have been kept in the dark while new marketing strategies were formed.
Mushroom Computers becomes the parent company, responsible for marketing and manufacturing BBC/Electron add-ons. Broadway Electronics becomes a subsidiary and continues as Mushroom's retail arm. Mushroom Software and Mushroom Electronics are two oher subsidiaries.
Paul Vaughan, managing director, said: "While continuing to manufacture peripherals for Acorn, we will develop independent products to an increasing degrec." Broadway Electronics, Aston Rd, Bedford, Beds MK 42 OLJ

## PSS track success

Kevin Bowes, the motorcyclist sponsored by PSS, is having a successful season. He is curremtly lying fifih in the Marlboro Clubman's Championship. This is only his second season, yet he has completed over 30 races.
Kevin is a 23 -year-old Coventry printer, who look up racing motor bikes as a hobby. His progress against local rivals was quick, and PSS decided to back him in is career on the track.

Kevin has qualified for the Marlboro Clubman's Championships at Silverstone on September 22 and 23.
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## Run for fun

The third annual Cambridge festival half-marathon, sponsored by Sinclair Research, has attracted a record 2,599 entries, including Brjtish Olympic marathan hope, Joyce Smith.
The half-marathon will take place on Sunday 15 July. Leading Sinclair staff have been persuaded to take part and Sir Clive and managing director Nigel Searle plan to jog along with the rest.

The fun run starts at 8.30 a.m. and the course is from Parkers Piece, Cambridge, through Fen Causeway, Grantchester and Trumpington. If you would like to participate, call Eddie Sharp at Cambridge City Council on 0223358977 .

## Stop those headaches

Do you see spors before your eyes or feel a pounding in your ears after spending hours in front of your trusty micro? If 50, you could be suffering from vision disorders or headaches, known to be problems faced by TV computer users.

You may find relief from
your ailments if you invest in an anti-glare filter, available from Romag. CEAF is a laminated filter combined with a diffused etched face which dissipates unwanted reflections. CEAF fits the curvature of the screen and is fixed on by vetcro.

CEAF will retail for under £20 and should be in stock at your major high street computer dealer.
Romag, Patlerson St, Blaydon on Tyne, Tyne and Wear NE2 1 5SG

## Scary monsters

Just out on the Commodore 64: Bonzo, from Audiogenic. Audiogenic says that Bonzo feazures brilliant full-screen graphics and "some of the most devious and vicious monsters ever devised."

You're a workman who musi collect boxes from different levels of the screen. You musi climb up and down ladders, avoiding monsters who are guarding the boxes. The monsters react intelligently and try to trap you on a particular level. Price: E5.95.
Audiogenic, B PO Box 88, Reading, Berks

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## 48K SPECTF

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    10 PAPER 4: BURDER 4: RANDIMIZE O
    20 ED 5UB 1409: GO SUB 1040
    22 GO TO 30
    29 CLS : BORDER 4: GD SUB 1390
    30 PAPER 7: 50 SUB 1580
    31 GO SUB 2000
    40 DIM v(11): LET 1=0
    45 LET bw=INT (RND*5)*1
    50 LET 1 w=0
    b0 LET wkt=0: LET tot=0: LET ov=0: LET pl=0: LET no=1
    70 LET bal=0: PRINT AT 10,15;ov: PRINT INVERSE 1;AT bw+5,27;"Q": PRINT AT 1B
F
    ;hi
    80 LET v=0
    90 LET V=INT (RND*270)+1+(pl/30)+(bw-3)+(2-INT (no/2))
    91 IF v<1 THEN LET v}=
    92 IF v>270 THEN LET v=270
    100 PAUSE O
```



```
"R" THEN GO TD 100
    120 IF INKEY$="1" THEN EO TD 160
    130 IF INKEY$="2" THEN GO TO 220
    140 IF INKEY$="3" THEN GO TO 290
    150 IF INKEY*="F" QR INKEY$="R" THEN GO TO 350
    160 IF v>=1 AND v<=S THEN GO TO 510
    170 IF V}\=6 AND V\langle=132 THEN GO TO 500
    180 IF v>=133 AND v <=232 THEN GO TD 520
    190 IF v>=233 AND v< 
    200 IF v>=267 AND v<=268 THEN GO TO 540
    210 IF v>=269 AND v<=270 THEN GO TO 550
```



You stand nervously at the crease as an expectant hush falls over the crowd...
That's how One Day Cricket, For the 48 K Spectrum, begins. Your challenge is to get the best high score or beat a random high score.
The program holds Essex and England teams and choice is made depending on whether you select 40 or 90 overs.

These may be changed by altering the following lines (where $\mathrm{x} \$$ is Essek/England and is is the opposition):

802 \& 812 venue (county/ 809 \& 819 data (county/ international)
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2004 \& $2503 \times \$$ Essex/England
The opposition is randomly chosen for cosmetic purposes and does not affect the outcome of the game.

At the end of the innings the scoreboard and score card may be copied on the ZX Printer.
Spectators on each side of the scoreboard raise their arms if a six is hit or a wicket falls.
At the end of each over you are given the option of obtaining the run rate and the required run rate. The scoreboard keeps track of total runs scored, batsman's runs, total when wicket fell, overs bowled, wickets fallen and bowler number bowling.

You play the game using three keys: 1 defensive stroke, 2 attacking/solid stroke, 3 aggressive stroke. Full details are in the program.
Capitals which are underlined are UDGs and should be entered in GRAPHICS mode. They are: A-M wicke, N spectators, $\mathbf{0}$ arms aloft, $\mathbf{P}$ spectators with arms aloft, Q indicator for bowlers.


```
220 IF v>=1 AND v<<=15 THEN GO TO 510
230 IF v>=16 AND v<=146 THEN GO TO 500
240 IF v>=147 AND v<=201 THEN GO TO 520
250 IF v>=202 AND v<=231 THEN GO TO 530
260 IF v>=232 AND v <=234 THEN GO TO 540
270 IF v>=235 AND v<=269 THEN ED TO 550
280 IF v=270 THEN GO TO 560
290 IF v>=1 AND v<=45 THEN GO TO $ }1
300 IF v>=46 AND v<=123 THEN GD TQ 500
310 IF v>=124 AND v<=181 THEN GO TO 520
320 IF v>=1日2 AND v<=201 THEN GO TO 530
325 IF v>=202 AND v}v=205\mathrm{ THEN GO TO 540
330 IF v>=206 AND v<=230 THEN GO TD 550
340 IF v>=231 AND v<=270 THEN GO TO 560
350 IF gV=0 THEN EO TO 100
360 IF bal>0 THEN GO TO 100
370 LET r=tat/OV% LET F$=STR$ F: PRINT AT 21.1;"Run Rate "
```



```
390 IF LEN r*#3 THEN PRINT AT 21,11;r$% GO TO 410
400 IF LEN r$>3 THEN PRINT AT 21,11%r*( TO 4): GO TG 410
410 IF tot>=h& THEN GO TD 490
420 LET q=hi-tot+1
425 IF ovs=350 THEN GO 70 435
430 LET p=40-av: LET t=q/p: GO TO 440
435 LET p=50-ov: LET t=q/p
440 LET t事=STR音 t: PRINT AT 21,17;"Reqd.R/R "
450 IF LEN t*<S THEN PRINT AT 21,27;t$+"* *"# GO TO 480
460 IF LEN t$=3 THEN PRINT AT 21,27;t$: GG TO 480
470 IF LEN t*>3 THEN PRINT AT 2&,27;t*( TO 4)% GO TO 480
400 PAUSE O
4日1 IF INKEY&<>"r" AND INKEY事く>"R" THEN GO TO 480
4日2 PRINT INK 4:AT 21,O;"


Varimbles
V（1）acores for player on score－ board
I veriable for player，no seore bw eurrent bowler＇s number Iw wcore at which last wicket fell Wht number of wickets fallen fot total rusis at current time or overs elapsed
pl current phyyts score no current batman＇s number bul ball number of current over v random number plus formula r run rate（total \(\div\) over）
－high tong（for required run rate）
ove number of overs chosen（40 or 50 ）
p 40－over（for required run rate）
19 9 p （for require run rate） 8 （bal＊4＋1）position for display bs initial tonal to aim for （updated if chosen）
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\({ }^{5} 5\) keyboard response（copy board）
es date
－\(\$\) players＂names is home team fS away team keyboard response： 5 another innings g5 copy card 5\％same match details as instructions os instructions again is details correct

\section*{Choose a county match or face some of the best international teams in One Day cricket，a Spectrum game by R．Butcher}

\section*{How II works}
40.92 set variables

110－150 check keyboard for input
160－340 resula for that particular ball
\(350-360\) ntops run rate／required run rate midway through over
370－400 works out／prints run ［13R
410 checks total behind so run rate may be printed
\(420-470\) work out／print required rum rate
480－493 reprints over required run rate and run rate，returns to game
su0－560 add wickets／runs to total／player＇s score
\(570-630\) print result of ball at appropriate position
\(640-670\) increment variabies
\(690-720\) print new data，updated if necessary after each ball
730 checks if wickers equal 10 for end of game
740 checks if more balls to over，
if so relurns to game
\(750-751\) check if \(\mathrm{BAL}=\mathrm{I}\) ，If 50 ＂end of over，＂deletes dis－ plays
752－760 check if end of over has been reached，if not seturn 10 game
\(700^{\text {game }}\)＂end of innings＂printed． Asks if copy wanted
\(\$ 00-921\) prinut out scorecard
932－95h card copy option，match details options

\section*{970 end screesi}

1000－1030 if wicket falls specta－ tors raise arms
1040－1260 title screen
1290－1370 instructions
1390．1408 input delails
1409－1565 UDGs
1580－1720 ser up screen display \(2000-2002\) if overs equal 40 picks county team
2500 if overs equal 50 picks national team
2502－2552 screen displays
```

    490 PRINT INK 4 ;AT 21, 17;
    491 PALSE 0
    492 IF INKEYs<>"r" AND INKEY*く>"R" THEN GD TD 491
    493 PRINT INK 4;AT 21,1; "Rin
    500 LET tat \(=\) tot+0: GO SUB 980 GO TO 570
    510 LET wkt=wkt+1: GO SUB 660: GO SUB 1000: LET pl=0: LET na=no+1: GO SUB 9E0:
    GO TO 580
520 LET tot=tot+12 LET pl=pl+1z GO SUB 9日O: GO TO 590
530 LET tot $=$ tot +2 2 LET pl=pl+2: GO SUB 9日0: GO T0 600
540 LET tot=tot+3: LET pl=pl+3: GO SUB 9日0: GL TD 610
550 LET tot=tot+4: LET plचpl+4: GO SUB 980: GO TO 620
560 LET tot=tot+6: LET pl=pl+6: GO SU日 980: GO TO 630
S70 GO SUB 640: PRINT BRIGHT 1; INK 2;AT 12, z;" ";AT 13,z;" \| ";AT 14, z;" ह
1

```

```

    SBO GD SUB 640: PRINT BRIGHT 1;AT 12,z;"ED ";AT 13,2;"日C ";AT 14,2;"日C ";AT
    15
"2;"日C ": PAUSE 15: BEEP. O1,O: PRINT BRIGHT 1;AT 12, z;"EEM";AT 13,z;"日GK";A
$\top 1$

```

```

    570 GD SUE 640: PRINT BRIGHT 1; INK 4;AT 12,z;" "; AT 13,z;" ";AT 14,z;" |
    ";AT 15,2;" " $=$ GO TO 690

```

```

"AT 15,z;" man GO TO 690

```

```

    -
    "静 15,2;" Hz GO TO 690

```

```

- 

";AT 15,2:" = "I GO TO 690
630 GO SUB 640: PRINT BRIGHT 1; INK 1;AT 12,z;"—" "AT 13,z;"■ ";AT 14,z;"
E
";AT 15,z;" min "i GO SUB 1020z GO TO 690
640 LET $z=($ bal *4+1)
G50 RETURN
660 LET $1=1+1$
670 LET $V(1)=p 1$
6BO RETURN
690 PRINT AT 6,14; tot
700 PRINT AT 日, 15; ;wkt
710 PRINT AT 5,22;no
720 PRINT AT 7,21;pI
730 IF wkt $=10$ THEN G0 TO 770
740 IF bal<6 THEN GO TO 日o
750 IF bal=6 THEN PRINT FLASH 1;AT 21,0;"END DF DVER": PAUSE 5O: PRINT INK 4
;AT 21,0; "... 2 , FOR a=5 TO 25 STEP 4: FOR b=12 TO 15: PRINT AT b, a;"
: NEXT bi NEXT az LET bal=0: LET ov=ov+1
751 LET bw=bw+1: PRINT INVERSE 1;AT bw+4,27;" " = IF bw=6 THEN LET bw=1
752 IF ov<40 THEN GO TO 70
760 IF OV $=40$ AND $\quad$ VV $=40$ THEN PRYNT AT 10,$15 ; " 40 "$ : LET $1=1+12$ LET V(1)=pl: GO T
0770
761 IF oV<50 AND oVs=50 THEN GD TD 70
762 IF ovmso AND ovs=50 THEN PRINT AT 10,15 ; " 50 ": LET $1=1+1$ : LET $\vee(1)=p 1$
770 PRINT FLASH 1;AT 21,18; "END DF INNINGS": PAUSE 200: PRINT INK 4;AT 21, 18;

```

```

    780 INPUT "ZX printer copy (y/n) P"; c\$
    ```

```

    791 IF c*〈〉"n" AND c*<>"N" THEN GD TO 780
    BOO IF GVE \(=50\) THEN 60 TO 811
    ```

```

    日02 PRINT AT 1,3; "Chel msford"; AT 1, 18; e\$
    ```

```

)/2; x
BO4 PRINT

```
g05 RESTORE 日05：FOR \(a=1\) TO 11
BOG READ W \(\$\)
B07 PRINT TAB（6）；w
BO8 NEXT a
B09 DATA＂G．Gaoch＂，＂B．Hardie＂，＂K．McEwan＂，＂K．Fletcher＂，＂K．Pont＂，＂G．Turner＂，＂D．Pr
ingle＂，＂D．East＂，＂N．Fhillip＂，＂N．Foster＂，＂J．Lever＂
B10 GO TO B90

白12 PRINT AT 1，3；＂Lords＂；AT 1，16；e
 ）／2；\(\times\)
914 PRINT
915 RESTORE 日15：FOR a＝1 TO 11
日16 READ W\＄
E17 PRINT TAB（6）；w\＄
918 NEXT a
日19 DATA＂G．Fowler＂，＂C．Tavare＂，＂D．Gower＂，＂A．Lamb＂，＂D．Randall＂，＂I．Botham＂，＂B．Tay Ior＂，＂G．Dilley＂，＂N．Cowans＂，＂N．Foster＂，＂R．Willis＂
日90 PRINT AT 19；6；＂TOTAL（＂）wkt；AT 19，14；＂wkts）＂；AT 19，20，tot
900 PRINT AT 20，8；ov；AT 20，10；＂．＂；AT 20，11；bal；AT 20，13；＂overs＂
901 LET rr＝tat－his LET remhi－tat
902 IF tot＝hi THEN GO TO 910
903 IF tot＞hi THEN GO TO 911
904 IF hi＞tot THEN GO TO 912


912 PRINT AT 4，11－LEN foff笋AT 4，12；＂won by＂；
919 PLOT 12，172：DRAW 230，0：DRAW \(0,169:\) DRAW－230，0：DRAW 0，169
920 PLOT 159，31：DRAW 25，0
921 IF tot＞hi THEN LET hi＝tot
930 INPUT＂ZX printer copy ？（y／n）＂；\(\$\)




952 IF ssく＞＂n＂AND s新〉＂N＂THEN GO TO 950
953 Gロ TO 970

95s IF \(y \$=" y\)＂OR \(y \${ }^{4}{ }^{4} Y\)＂THEN BORDER 4：GO TO 30
957 IF y＊く〉＂n＂AND y＊く〉＂N＂THEN GO TO 955
75は GO TO 29
970 CL5 ：BDRDER 4：PRINT＂．．．CLDSE DF FLAY．．＂＂PRINT＂＂As the sun slowl \(y\) sets over the wicket，we must bid farewell to another day＇s exciting cricket．
The teams，players and spactatars will be here the same time tomorrow－will
you set a new record runs total，or be bowled out for a record low ？．Will one
of your batsmen score an all time record over 40 or 50 overs？Who knows what m
ay happen in another game of．．．．＂
971 PRINT AT 15,8 ；＂ONE DAY CRICKET＂
972 PAUSE 0
980 LET balmbal＋1
990 RETURN
1000 PRINT AT 19，22；tot：PRINT INVERSE 1；AT 7，21；＂
1010 RETLRN

6， 0
；＂NHMN＂：RETURN

， 2

1040 CLS ：PAPER 4：BDRDER 4
1050 PLOT 15，159：DRAW 15，0；DRAW 0，－22；DRAW－15，0：DRAW 0，22
1060 PLOT 38，137：DRAN 0，22：DRAW 15，－Z2：DRAW 0，22
1070 PLOT 76，137：DRAW \(-15,03\) DRAW 0，22：DRAW 15，O：PLDT \(61,148:\) DRAW 15，0

1090 PLOT 120，137：DRAW 8，22：DRAW B，－22；PLIT 124，147；DRAW 8，0
1100 PLDT 151，137：DRAW 0，14：DRAW－8，日：PLOT 151，151：DRAW 8，8
1110 PLOT 31，日B：DRAW－15，0\％DRAW 0，22：DRAW 15，0
```

1120 PLOT 39,日8: DRAW 0,22: DRAW 15,0: DRAW 0, 11: DRAW -15,0: DRAW 15,-11
1130 FLDT 67,8日; DRAW 0,22
1140 PLOT 75,8日: DRAW -15,0: DRAW 0,22: DRAW 15,0
1150 PLUT 103,B8: DRAW 0,22: PLOT 119,88: DRAW -15,11: DRAW 15,11
1160 PLOT 143,BA: DRAW -15,O: DRAW 0,22z DRAW 15,0: PLOT 143,99% DRAW -15,0
1170 PLDT 159,8日: DRAW 0,22: PLOT 151,110z DRAW 15,0
1190 FLOT 223,144: DRAW 6,0: DRAW 0,-40: DRAW 7,0: DRAW,-95: PLOT 216,11: DRAW
0,93: DRAW 7,0: DRAW 0,40: PLOT 216,11: DRAW 20,0,PI/2
1190 FLDT 224,144: DRAW 0, 40: PLOT 22B,144: DRAW 0,-40: PLOT 226,97: DRAW 0,-62
: PLDT 220,95: DRAW 6,-8: PLOT 232,95: DRAW -6,-8
1200 PLOT 199,8: DKAW 0,BO: DRAW - 32,0: DRAW 0,-BO: PLOT 183,8: DRAW 0,GO
1210 CIRCLE 127,40,20: FLOT 127,20: DRAW 0,40: LET a=123; FOR b=20 TO 60 STEP 3:
PLOT a,b: NEXT b: LET a=131: FOR b=20 TO d0 STEP 3: PLOT a,b: NEXT b
1220 PRINT AT 16,2;"by";AT 1B,2;"R.Butcher"
1230 PRINT AT 19,3% 1984M
1260 INPUY "Instructions ? (Y/n)";as
1270 IF a$="y" 口R a$="Y" THEN GO TO 1290
1271 IF as<>"n" AND a\$<>"N" THEN GD TO 1260
12BO GO TO 1390
1290 INK 7: CLS : PRINT "INSTRIJTTIINS FOR ONE DAY CRITKET": PRINT "

```

1300 PRINT＂In this game you act for the wide batting．Dne Day Cricket cons ists of 40 overs（County）or 50 overs\｛International）；ending either at the end of the allotted overs or the loss of 10 wlckets ，whichever the socner．＂：PRIN \(T\)＂The scoreboard keeps you informed of what is happening after every d巴livery．＂：PRINT＂For a ball to be bowled press either the keys 12 OR 3．＂：PR INT INVERSE 1；AT 19，10；＂PRESS ANY KEY＂
1310 PAUSE O：CLS \＆PRINT＂These keve also simulate the batsmane stroke to th at particular delivery．The keys represent at follows．．．＂
1320 PRINT＂＂1 DEFENSIVE STROKE＂
1330 PRINT＂2 ATTACKING／SOLID STROKE＂
1340 PRINT＂3 AGGRESSIVE STRDKE＂
1350 PRINT．＂＂Ey tactical use of these key for each ball，you determine the out COMR（NO－SCORE，RUNS SCORED，DUT）．＂：PRINT＂（e．g）Using the 1 key will not prod uce as many runs as 2 OR 3 but there \(1 s\) less chance of being out．＂：PRINT INVERSE 1；AT 19，10；＂PRESS ANY KEY＂：PAUSE O：CLS ：PRINT＂The following statisti cs are also determined by the key chosen．（RUNS／OVER：RUNS／WICKET DVERS／ WICKET）．＂
1 ₹6O FRINT＂Apart from these set ratios，alsotaken into account are．．．
（a） E
atsmans No［1－10］（b）Bowlers No［1－5］（c）Players eurrent ：
tore For both（a）\＆（b）the bewt plavershave the lowest No．At t he bottom left corner of theScareboard will be a team displayed at random， dlong with their score that you are trying to beat．Before the first inningsthis score is determined by chaosang a Sk ILL FACTORi1－5）．＂：FRINT INVERSE 1 ；AT 19，10；＂PRESS ANY KEY＂P PAUSE O：CLS
1361 PRINT＂ 2 being the easiest．This score 15 then treated as a ina score－bean \(g\) updated with your hi totalif that 15 the case after every 1 nnings．After pach 1 nnings you have the optzon of changing the MATCH DATA which will result in a ne w randomly chosen target independent of your hi－scare．＂
1362 FRINT＂By pressing the \(R\) key you are given your RUN RATE and the REGU IRED RUN RATE to beat the opponents total．This ley will anly operate at the end of an over．Pressing 8 agaln will return you to the game．At the end of the innings you are offered the option of a COPY of both the SCOREBOARD
and SCDRECARD DN THE \(Z X\) printer．＂
1370 INPUT＂Instructions again ？（y／n）＂；b；
1380 If bs＝＂y＂OR bs＝＂Y＂THEN GO TO 1290
1391 IF bsく＞＂ח＂AND bsく＞＂N＂THEN GO TO 1370
1390 INK 0：PAFER 7：CLS ：PAPER 7：PRINT AT 0，10；＂MATCH DATA＂：PLDT 75，175：DRA W 0，－11：DRAW B7，0\％DRAW 0，11
1371 INPUT＂Date＂；es
1392 IF LEN es \(>12\) THEN G0 TO 1391
1393 PRINT INVERSE 1；AT 3，3；＂Date－＂；es
1394 INPUT＂No of overs＂sovs
1395 IF GVEく＞40 AND OVSく〉50 THEN GO TO 1394
1396 PRINT INVERSE 1；AT 5，3；＂OVErs
1401 INPUT＂Skill factor（1－5）＂ssk
1402 IF \(s k<>1\) AND \(5 k<>2\) AND \(5 k<i>3\) AND \(5 k<>4\) AND \(5 k<>5\) THEN GO TO 1401

Page 12 HOME COMPUTING WEEKLY 24 July 1964

\section*{M PROGRAM}
```

1403 PRINT INVERGE 1;AT 7,3;"5kil1 factor - ";sk
1404 LET hi=(4*OV5)+(๕k*2S)-1NT (RND*20)+1
1405 INPLIT "Are the above correct";i=
1406 IF i$#"Y" DR iss"Y" THEN RETURN
1407 IF ま$<>"n" AND i$く>"N" THEN GO TO 1405
140日 GO TO 1390
1409 RESTDRE 1409: FOR f=USR "a" T0 USR "q"+7: READ %: POKE f*x: NEXT f
1410 DATA 24,24,24,24,24,24,24,24
1420 DATA 0,0,0,0,31,31,24,24
1430 DATA 199,198,198,198,199,198,198,198
1440 DATA 0,0,0,0,254,254,170,178
1450 DAJA 0,24,56,112,94,0,24,24
1460 DATA 0,0,0,0,0,0,192,192
1470 DATA 192,206,223,223,223,206,192,192
1480 DATA 192,192,193,193,195,195,199,199
1490 DATA 192,192,128,12日,0,0,0,0
1500 DATA 12,12,24,24,49,48,96,76
1510 DATA 0,0,0,0,3,3,7,6
1521) DATA 192,192,192,192,192,192,192,192
1530 DATA 0,0,192,224,112,48,0,0
1540 DATA 24,36,36,60,66,129,129,129
1550 DATA 0,0,36,36,66,66,66,66
1560 DATA 153,165,165,60,66,129,129,129
1565 DATA 0,56,124,124,124,56,0,0
1570 RETURN
1590 CLS : PAPER 7% GDRDER O
1590 FOR a=3 T0 14: PRINT INK S;AT a,O!" &&%"ng NEXT a
1600 FOR a=3 TO 14! PRINT INK 5;AT a,29;"Ji&m"{ NEXT a
1610 FOR b=0 TO 2: FOR a=0 TO 31: PRINT INK S;AT b,a;"害": NEXT a: NEXT b
1620 FOR b=21 YO 20 STEP -1: FOR a=0 TO 31: FRINT INK 4;AT b,a;"M": NEXT a: NE
X
Tb
1630 FDR 2=4 TO 2日: FOR b=3 T0 19: PRINT AT b,as"慁": NEXT b: NEXT a
1640 PRINT INVERSE 1;AT 4,13;"TOTAL";AT 5,20;"No "
1641 PRINT INVERSE 1:AT 5,25;"BW1"
1642 PRINT INVERSE 1;AT 6,26;"1";AT 7,26;"2";AT 8,26;"3"%AT 9,26;"4";AT 10,26;"
5"
1650 PRINT INVERSE 1;AT 6,14;"
1660 PRINT INVERSE 1;AT E,10;"WKTS";AT 日,1S;"
1670 PRINT INVERSE 1:AT 10,9;"OVERS";AT 10,15;"
1680 FOR A=5 TO 25 STEP 4: FDR G=12 TO 15: PRINT AT B,A;" ": NEXT b: NEXY a
1690 PRINT INVERSE 1;AT 17,19;"LAST"
1700 PRINT INVERSE 1;AT 1B,19; "WKT";AT 19,22;"
1710 FOR ax16 TO 19: PRINT AT `,O#"".'1!": NEXT a
1720 FOR m=16 TO 19: PRINT AT a,29;" ": NEXT a
1730 RETURN
2000 IF ovs=50 THEN GO TO 2500
2001 RESTORE 2001: FOR a=1 TO INT (RND=16)+1: READ f$: NEXT a
2002 DATA "Notts","Sussex","Somerset","Myddlesex","Surrey","Hampshire","Leıcs","
Kent", "Yorks","Derby%", "Gl aucs","Gl amorgan","Northants", "Lamcs", "Warwicks","Wore
s"
2003 PRINT INVERSE 1;AT 17,5;f*
2004 LET x$="ESSEX"& PRINT INVERSE 1;AT 6,5;x$
2005 RETURN
2500 RESTDRE 2500: FOR a=1 TD INT (RND*6)+1: READ f$: NEXT a
2501 DATA "ALstralia","India","Pakistan","Sri Lanka","W. Indies","N. Zeal and"
2502 PRINT INVERSE 1;AT 17,5;f$
2503 LET x$="ENGL_AND"g PRINT INVERSE 1;AT 6,5;x$
2504 REJURN
2550 FOR a=3 TO 14: PRINT AT *,O;" ": NEXT a
2551 FOR as3 TO 14: PRINT AT a,29;" ": NEXY a
2552 FOR bm0 TO 2: FOR a=0 TD 31: PRINT AT b,a;" "% NEXT a: NEXY b
2553 RETURN
9999 SAVE "oneday" LINE 1

```


\section*{Complied with the assistance of Britoin's inading software distributors,} Including: Pinnacle, SDL, PCL, wobators, Pos and Sotware Contre.
\begin{tabular}{|c|c|}
\hline 15abre Whut & Htimatstil \\
\hline 2 Jtc Set wilv & Sottware Prols 1.1 \\
\hline 35top the Exprest & SNactiolr 19\% \\
\hline 4 Hatch Polits & Srrcizar (-) \\
\hline 5 Mugsy &  \\
\hline 6atk Ate & Uleimett ( 3 \% \\
\hline 7 Sculs g \({ }^{\text {olve }}\) &  \\
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\hline 9N ght cunmer & Digital integratnl] \\
\hline 10Manlc Miner & Software Prods l-1 \\
\hline
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\hline  & Mastertronk \(\{1\) \\
\hline 5 Dracon Chess & Gasis Software (-1 \\
\hline 6 Mr big & Mitrodeas t-) \\
\hline  & Knight \({ }^{-1}\) \\
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\hline 10Hunchosk & Ocean 1.9 \\
\hline
\end{tabular}


MCO2O
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\hline 2 Tank commander & Creative Sparks (-) \\
\hline 3 chariot ace & Microantics \({ }^{\text {a }}\) ) \\
\hline 4 Stooker & visions (-) \\
\hline 5 Figint 015 & FerrantlCratis) \\
\hline cGames destgner & centactici-1 \\
\hline FWizard and the princess & Melbourne House in \\
\hline agranmasterchess & Audiogenct \({ }^{\text {a }}\) \\
\hline 9puck shoot & mastertronle t-p \\
\hline 10, Tower of Evil & creative sparks t-1 \\
\hline
\end{tabular}

\title{
MSX computers are big news. Backed by some of the biggest names in electronics, the stylish new computers are due in the UK from Japan in September.
}

\section*{ \\  \\ \(\because)(\sqrt{a})=1\) stort (i)}

\title{
We give yout the rundown on who's planning what for MSN
}

Yamaha*s MSX "micro, due hera in November, will also be a musical instrument, with its own rempte piano-ityle keyboard

The eystem will cost about \(£ 600\) and will compriae Yamaha's CX5 computar with a bultin sound module and added keyboard,

Jerry Uwins, marketing manager for the company's UK arm, Kemble-Yamaha, saud "With 48 preset sounds it can sound like a plano, trumpet, volin... 日ny instrument you care to name
"Composing is goang to be one particular teature
"Ons of the important points to gtress is that the vanous squeaks and squawks that you get out of Commodore and Sinclatr are not in the same league.
"The sound as very similar to our DX9 synthesiser, which is a proper, pedigree musical instrument using proper classicai notation"

The MSX computer from Sony will probably be called the Hit Bit.

Sony's new business manager, Mike Margolis, explaned: "Until \({ }^{3}\) week before we launched the Walkman we ware in two minds abou: whether to use the name

"We thought: "Why call it a sily name like Walkmen... it's ndiculous'. We thought long and bard about ft. But it's now part of the language. It has a personality and it's part of a lifestyle.
"A lot of the thinking behind the computer was done by tily sams people who are behind the Wa,kman, so we would
expect the same unique approach. The uniqueness of the name has been an advantage to the Walkman and it would be the same for the computer"

Sony's present range of products in the UK melucie hifi, audro, vieo. TV and troadcasting equipment for both TV and radio.

And Mr Margolits said the computer would be soid through dealers who are currently seileng Sony products

Answaring enticisms that the MSX standard could deray computer devaiopment, he sald: "The way we sae home computers is that they have traditionaliy been deveroped by boffing, reviewed by boffins arsd bougnt by boftins.
"They are people who ere intarested in computers for thelf own sakes. We believe there are a lot of peaple who are interested in fome entertarminent, not only to do theur own pragrarming
"There is a large number of people who are afraid of buyirg home computeris. They are not gure what to buy and they have a whole list of feare:"

The only reason for innovation was to bring benefits to the consumer - which would continle to be done with MSX - but thare was no point in putting the latest chip into a home computer to sort 10 megabytes of information more quickly

Speed of games was important, though. And the format allowed considerable sophistucation, not only with discs and the CP/M business operating system to come, but also the possibility of a second processor - increasing spead by two to three times - within about three years.

He stressed, however, that the compoters would always be upward-compatitle. The companies making them were haghly compettitue and the only common ground was compatibility

Mr Margolis said Sony wautd be bringing out its own

Continued on page 3.

What MSX will mean VSX will cure the major headache for home computer users and deaners sottware for ane micro won't genarally work on another maker's range
Several Japanese companies have got together to bring out computers which all use the same BASIC and operating systerm. And Europeant and American computer makers are think ing of doing the same
it means that all software and peripharals will fun on any computer using the same standard, designed by the U.S. Company Microsaft. MSX stands for Microsoft Extencied

MSX computers are due in the shops in September from, among other companies, Hitechi, Teletan Sanyo, Mitsubishi, Sony, Toshibe, Canon बin Yamahs

\section*{Piul Liptrot}

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compary


Continued from page 1.
perpherals, like disc divive and poystick, but probably not a standard joysuck.
He said: "We phde ourselves on being innovative"

Toshiba expects to have its computer in the shops in September/October. Product manager Chris Greet sand 'We're been ahead of the field in Japan, so we will possibly be one of the first in the UK!'

UK buyers had the advantage that they would be getting the second generation of MSX computers, advanced on what first went on sale in Japan.

Talking of computer develcoment, he said that the problarn with boffins and research staff was that they atwaye wanted to want for the next advance before bringing out a computer

He felt that in the beginming there may be some confusion in the minds of buyers about which MSX computer to choose. But thrs would be cleared up as each manufacturer advertised and promoted its additional features.
He said" "At thee end of the day the machines are completely different. Some have cassettes buitt in, some have got built-in joysticks."

JVC's computer, made in the town of Ewal, 50 miles north of Tokyo, will atso have 64K of RAM and cost will be about E250. The company aks piant to offer a monitor, \(3 / 8 \mathrm{in}\) disc drive and a data recorder. JVC's essutsint marketing marnager, Stephen Michaelis, sard hes company was also thinking of introducing a 5 K in drive because that format was quite popular.
be running traning courses for dealers before the launch:"

There would also be training for servce engrneers at the same centres, as wall as in Scotland and Ireland

Mr M chaeris said: "I don't see many problems on that side - video recorders are far mora comptex and our dea er network can service them already. Computers are a plece of cake"

JVC, short for the Japan Victor Company, is the inventor of the VHS video secorder format - which now hed z clamed 80 per cent of the market - and makes video recorders, TV , hi-fi, including compect disc puayers, as well to other products. It employs 1,200 people worldwide.

Mr Michaelis expected JVC to export tes computer to most of Europe, starting with France


He sald: "At some stage you have to put tornatheng on the marketplace.
"The technology belund the MSX standard as not unuque It usea standard components. But we know the reliabtity and we know how to develop softwere for the computers.
"It you look at the problerrss other computer manufacturers are having you can ses the advantages of existing technology. That tan't to say that our computers are absolutely fixed. There's a lot of things coming from Japan:"

The general manager of Canon's eystems division, Fichard Kensedy, expected his company's computer to start arriving in October.

He was calitions, however, stayng: "We are takıng a very advised new of the market. We are very enthusiastic about the product and the market and we tre trying very hard to get it right from the point of new of availablity of software. From the past, we know that software can be a litile late:'

He expected Canon's 54 K computer, costing about £250, to get a major marketing push in the apring of next year. 8y then, he said, it would be on sale in every major high street retales.

He expected tremendous competition between the makers of MSX computers.

The objects of the MSX working party had been superb but "certarn people" woutd now adopt the standard after the hard work had been done by the founders.

He sard: "We aro arming at the audio and video dealer who we are already supplying.
"Some of the dealers, bbout 10 per cent, are already selling computers and they know a fair bit about them. We have two tratining centres, in Loncton and in Leeds, and we'll
and Germany next year.
But supplies for the UK would at first be limited. He sand: "at's very critical coming into the market In October. This year I don't think we will be able to meet demand because fit's coming too late.'.



MSX coinputers have been on sale in Japan since October 1983 and we have been fortunate oncugh to have had MSX models at Aberdean since that time．The purpose of this serles of How to MSX articlies is to assust readers in understanding all the features and complexities of the MSX range．
The MSX concept 解 a gimple one－MSX toeks to set a standard for home computers．Manufacturers foring the MSX Group agree to make computers to the same technical and softwase specitication．

As all MSX computers have the asme cassette，joystick， cartridge and printer interfaces， software and peripherals made by，say，Tobisha，will run on a Sanyo or any other MSX micro．
The MSX concept has had the backing of af least 20 of the largest Japanese electronic corporations Bnce 1983 and they have been joined thrs by European glants G．E．C．and Philips．

MSX has already taken a large slice of the Japanese home compuier market．With the mught of compantes like Canon，Hitachi，JVC，Mitsu－ bishı，Sanyo，Sony，and Toshibe combining to make computers to sangle standard，there is no doubt that MSX will also take a substantial share of the European market．

The manufacturers amm to
sell ther macros as＂family computers＇：
As each MSX Group member also manufacturers horme entertanment products it is no surperse that MSX micros can be interfaced with redio，TV，ha－fi and wadeo equipment．JVC，the manu－ factures which invented the VHS video system，has already shown its mucro linked inter－ actively with a video disc player．JVC and the other manufacturers see MSX as setting the standard for home computers，just as VHS sets the standard for video recorders．
Each MSX micro thas an extended version of Microsoft Basic in ROM．Switching ons typical MSX mero boots the BASIC which is in a 32 K ROM which occupres en aree of memory from 0000 H to 7 FFFH ．

The computer then finds the lergest contimuous black of memory from FFFFH down to 8000 H and uses thus for program and data storage．All MSX mucroe start up with white letters on a blue back－ ground，The following is displayed st the top left：

MSX BASIC version 1.0 Copyright by Mlerosoft 28815 Bytee free．
Ok
The start up mode is SCREEN O（clatailed later）and lint 24 of the screen displays the words：

\section*{color suto poto list run}
to semind usere of the intiat defintions of the five function keys．This line chenges to show：
colour cload＂cont list run
－Program 1 －difeplays bars of all 16 colours
10G COLDR 15，1，1：5CREEM 2
119 DPEN＂GRP：MAS』1
12Ø PRESET \((35,5)\)
130 PRINT \＃1，＂A CORRECTLY ADJUSTED SE \(T{ }^{17}\)

140 PRESET \((35,15)\)
15は PRINT＊1：＂SHDLS 15 CDLOURS \＆BLAC あ＂
16 CLDSE＊ 1
178 FOR \(6 \%=2\) TO 15
180 CDLOR G\％
198 LINE（G\％＊16－15，30）－（G\％＊16，184）， 8 F

2因因 NEXT G\％
21す FDR D\％＝1 TO 12才UD：NEXT D\％

Microsoft has obviousily given agreat desi of thought to the character set as it contans all the usual letters and figures pius many language，scientific，game and graphic shapes．The German umlauts，the French accents， circumflexes a the mathe－ matical symbals will be especially popular with schools．

Program 2 displays all the 256 charactes on the screen．

SCREEN 0 is the first of the two text modea and gives a format of 24 lines each with up to 40 characters．All UK MSX rixcros default to 37 characters per line when switched on．

The WIDTH command selects the number of characters per line．It la possible to get the full 40 characters by antering WIDTH 40.

All Japanese MSX micros default＇to 40 characters． Perhaps our Far East triends know that very fow UK TV eets have a picture width control which can be adjusted by the customer and that many sats therefore＂overacan＂

Each character dispsayed in thes mode is made up of \(6 \times 8\) pexels．The built－in character set stores \(\mathrm{g}^{\mathbf{8}} \times 8\) pixels，but in this mode the right－most two cotumnt of pixels are not chisplayed．
When the ecreen mode is changed to 0 or 1，the charac－ ter set is copied from ROM IRead Only Memory）to RAM IRandom Access Memoryt so this makes fit possubes to re－define any of the 256 characters．This feature al．ows special characters to be displayed without going into high－resolution mode．Two of the sixteen colours can be used in this screen 0 modie－one for foreground and one for background．
SCREEN 1 is the second of the text modes and gives a format of 24 lines each of up to 32 characters．Agant the switch－on default width is less than the maxamum possible－ the default for screen 1 is 29 characters per line．To get the full number of characters per line enter WIDTH 32，but on nearty all UK TVs the taft－most character would be off the edge of the screen．
The MSX specification detines the use of two colouts in SCREEN 1 mode．In later

\section*{－Program 3 －demonstrates the speed of MSX computers}

1／BZ COLDR 15，1，1：SCREEN 2

126 LIVE（RND（1）＊250，RND（1）＊197）－（RND
（1）＊250，RND（1）＊190），RND（1）＊14＊2，日F
13．NEXT F\％
Issues of MSX COMPUTING， we will describe a program－ ming method which atlows all 16 colours to be displayed
At present the character set IE split up into 32 groups of eight characters and the foreground and background colours of each group are the same effectively giving atwo colour display．Our method will ahow how to alter the fore ground and background colour of anl these 32 groups．

Remember it is also possible to redetine the shape of each character in acreen 1 mode

SCREEN 2 is the high－ resolution mode which has 256 \(\times 192\) pixels defenition．All 18 colours can be displayed at the same time．

The horizontal colour resolution is erght dote which meane that in avery group of fight adjacent horizontal dots， there can only be one fope－ ground colour and one background colour．Any two of the 16 colours can be used for each group of 8 dots．The vertical colour resolution is one pexel，theretare any of the 16 colours can be praced next to each othar vertically．Thare are many commands for creating hirersolution patterns and they are all very flexible．

Program 3 demonstrates the speed of the computer and also shows all the colours．First hte computer to put into SCREEN 2 （hi－res mods）and then 100 boxel of random sizes and colcurs are displayed

There is a command which allows printing of nomal text on the hi－res bcreen．As the text can be placed enwwere on the \(256 \times 192\) grid，this allows much greater control over where it is printed than in either of the text modes．

SCREEN 3 is the mutiv－ colour mode and has \(64 \times 48\) resolution．Each of the 3072 pixels on the screen can be in any of the 16 colours．
When text is printed to this screen，all the pixels that make up the characters turn on one
of the SCREEN 3 prxete which are equivalent to s square of sixteen SCREEN 2 mode pixals．Since the lenters are made up of \(8 \times 8\) dots，and the screen has \(64 \times 48\) prexels，you can get 6 rows of eight charecters in this mode Thrs is useful for thite pages etc．
Progrom 4 draws 200 lines at ranctom positions on thit screen and shows the saze of the pixals in the SCREEN 3 mode．

MSX computers can diaplay up to 32 spites at the same time and can remomber up to 256 ＇sprite pattems＇．Sprites are characters whose shape． colour and posituon can easily be defined．They can be placed much more exactly than characters can and there are buit－in cotisron detection routines．There are four sprite modiss，these are specified by the sacond parameter of the SCREEN Command

The four sprite modes are combinations of large or small sprites and magnified or unmagnified sprites．The modes are as follows：
\(08 \times 8\) unmagnified
\(18 \times 8\) magnified
\(216 \times 16\) unmagnified
\(316 \times 16\) magnified
The numbers refer to the number pexets make up the sprites \(0 . \mathrm{g}\) ，a mode 2 sprite has \(16 \times 16=256\) pixels．Magnatied means that every pixel is the size of a square of four pixels，

\section*{－Program 5－者 knight－shaped sprite bounces off the screen adiges}
```

10| COLOR 15,1,1:SCREEN 2,3
110 S$="%:FOR F%=% TO 31:REAO A$
1205$=S$+CHR$(UAL("8H"+R$)):NEXT F%
13| SPRITE\#(0)=S\$
140 DATA B, 1,6,1D,2A,2A,2A, 1F,4C,F7,F
0,18,7,2,3E,FE, 1日, BF,65,11, C9, A9, 日1,F
3,7F,9F,31,41, B1,81,F9,FD
150 }x%=128:Y%=9
160 X5%* 1; Y5%=1
170 PUT SPRITE B, (X%,V%),13
18@ x% X% +X5%: Y% = Y% + Y 5%
190 IF X%<目 OR X%>210 THEN X5%=-X5%
2\&| IF Y%<目 DR Y%>156 THEN YS%=-V5%
210 GOTU 170

```

\section*{－Program 4 －drawe 200 lines and shows SCREEN 3 pixel} －

10\｜COLER 15，1，1：SCREEN 3
110 FOR F\％＝1 to 2R0
12円 LINE（RND（1）＊256，RND（1）＊192）－（RND
（1）＊256，RND（1）＊152）， \(\operatorname{RND}(1) * 15+1\)
130 NEXT F\％
so the sprites becorne four times their normal size．
When using \(88 \times 8\) suze，the computer can tione up to 256 sprite patterns．When using a \(16 \times 16\) size，the computer can store up to 64 sprite patterns． Remember－only 32 sprites can be dusplayed at the one time


Program E showe a sprite in the shape of a knight bouncing off the odges of the screen．To stop the program press the CTRL and STOP keyt at the same time

Try changing both the occurances of the number 1 in 4ne 160 to 2 and note that the sprite moves faster．



\section*{ABPASCO}


\section*{(EEDS SUTIWRRE}

\section*{DN MUNTYY:}

Your party of archeologists enter the pyramid in search of the mummies of the pharoah's household. There are five burial chambers containing treasure, secret scrolis, keys, royal mummies and some nasty surprises. To pass from one chamber to the next, you must find the key and royal mummy, but beware, you may uncover a guardian, who will chase your group to avenge your desecration!!
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Access orders welcome

\section*{Velagen laif 4nE TIFIE， a日屋 Atitirs P音析}

Quicksalva， 13 Palmerston Rd，
Southampion，Hants SOl ILL
Quicksilva＇s first adventure game for the Orac ts a classic aill－ text version，stanlar at layout to most olhers of ths type．You choose the role of a warnior， priest or wizard an a quest to destroy the exal Velner Your journey will take you through dark caverns and passages where unled dangers lurk bus vasi ireasures may also be found If vou like adventures then Velnor offers a gatod challenge． with logical thonght and inspira toon boith playing therr part．An opton to save the gatne at any stage is provided which worked sat isficinrity and is probably
essential af you do not have the patuence to solve the pazzle in one go
There ss litile assistance guven and，by the nature of the game． thus is correct．But perhaps some fundamental explanations of the very smplest moves and com－ mands should have been supplied for the novice．The descriptions of your surroundings are quite reatistic if vou are with chldiren make sure they are nol frightered by gobins，trolls or much worse nasties．
Alt in all，a farrly standard adventure whhout two many trils

\section*{insinuetions}
\(75 \%\)
pla）abiluts
\(75 \%\)
graplice
N／A
value for money
\(80 \cdot 5\)

\section*{Star Force rever 32K BBC 9.99}

Argus Press Software，No Golden Sq，London WIR 3AB

Anolher in the Miad Games stries．My major critscism of this progrant is that the matormation screens，while clear and in－ ambuguous，are most ununspuring Even the major planet display is now very exell ng

The gathe ts，however，afully implemented，way based． tratert game and wili atpeal to those who enjoy a good lomp thoughtril batele amongst the stars the a m th to destron the home planct of the Zurgs or to capiure，and keep， 23 of the esher planets in the galaty

You start b）choosing wite proportions of cath lyje of figtaing shop to commission for

\section*{Firelady plus Sncter amt Emintirn Ti matan}

The Mrat is quite long and take some time to load．Judging by The ewkwardness of the msimathons it was writicn by couple of yaingsters and viewed of th that light it is a very crediable elfort 1 don＇t know why the man character is a＂ftre lady＂ bus due credit for ancluding the girls an the heroism charts
A block of flats is ablaze andı you must chamb 10 floors 10 save an old mans．You can piay agansi he compaser of another player usc your movements are deter anned by dive．In Fact，it＇s actualiy a revamped Snakes and 1 a，iders－itrelhgently done， If you land on acaore molticnes mutst guess how many galsons of water are needed to extinguisher， and you＇ve saved someone＇s life a so you gain another throw；日 skull and trosstones，and you＇ll ＇riced a＇ 6 ＇，and of course there \(x_{\text {tere ladders }}\)

By the bame aurhors，the secend pragram，also long，is a bog standard Snakes and Ladders．
Both games make goad， colourful use of graphics，and are armed squarely at the younger utsers．

\section*{inslructaons}
playabilisy
praphics
A value for money

\title{
Puzzles and adventures
}

Now get out of that！Our reviewers have tackled this software before，and this is what they think
the batte Then you progress by thret major stages，expressed as screens．The compuler screen can give intelligerace，energy staus and ficet delants whilst the navigational one allows star jumping，orbiting and attacking． if you are 1 a ortht you may bombard，asaull or retire Notice that there is no chance of a freendly 日pproach！In battle the seretn is graphically much better as you walch the various ships beng destroyed before your eyes．Ab miteresing，yet nut 100 long－winded，game to be sure

D．C
unstructions
playabi it
－raphes
value for money
\(55 \%\)
sinuo
\(60 \%\)
\(70 \%\)


The Mystery of itreluvit Sctar
 Electron E7．95
（hhards， 189 Etan Rd ，［ford， Esser IGI 200

If yout like putzales thent thas 1 musli－faceted program may be just your cup of tea．To descr．be thas as a program is tar 100 mean，for the package comprises if four individatal，ver linkeel Rames of different types and stries
The firse is called Bristol alid involves the Jigsay type skills －af piecing together a message lo London you must waskder around researchnge your infor mation ready logo exploring．the atm bere bang to get just the information you need al minumum cost in tume and money．In Jamajea you B looking for an asland to match vour rescarch and can survel thuse vou r nd before landing to charier a boat
Funally，you dive in your＇ chosen location on the Seawitch in the hope that you find the ultumate goal－ithe beauluful lava Star ruby and alf the gold that the wrecked ship carried When you considet the cost ol undividual programs like this you tan only conclude that the is exceptonal value for money ard unlike short actuon games，the
value for money
直 \(=\frac{1}{2}=t=t=t\)
work involved is likely to take is number of days of nol wecks．Its claim to be educational is reason ably farr 100．Well done shards！

\section*{7sirurlams}
playabilaty
graphacs


\section*{Eatwaycime BREBIE ES．}

Quicksilva， 13 Palmerston Red Southamplon，Hants SOl ILI．
thale are wiped our，At firsh the game seems easy，but when you have only one hole left to fill you realise it isn＇t．If you＇re desperate the earthquake Wth a chance of whinug 1200 function can be used to swivel on completton of this game，the gates 9 random
enthuslasm overwhelmed me Afler seemer the diffoculy of
On toadng you are presenied the later salages I can safely say with a sereen full of complex the E200 will be wetl earne pansages and angled gates．You

M．B． are at the top cluschurs a barrel which you ton roll ieft and right intaructions or drop down．If you drop it，it playabslits falls down passages bouncing off giaphacs the gates at right angles，falling value for money into one of eight holes ait the
botom．When the barrel drops on any gate al swiveis to slant in
the opposile direction
The object is to Fill all ane holes wtth 20 barrels．which 13 not as easy as it sounds．If a barrel es accidentially dropped in a full hole all the barrels in that

\section*{THOUGHTS \& CROSSES 37 MARKET STREET, HECKMONDWIKE, WEST YORKS. Telephone: 0924-402337}


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GATE CRASHER is a game of sk II and strategy that will test your mind to the Imts . PLLS you wil also have the opportunlty to WIN \(£ 200\) !

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Create your own works of art with this simple to use yet sophisticated feature-rich art tool which includes fuil machine code 'Paint routine al owing you to colowr fill any shape ELECTRO-ART is supplied in a box with a full nstruction manual.

\section*{VELNOR'S LAIR - Oric 1/Atmo £6.95 \\ Gatt e the ev I W zard Velnor in the caves of Mount El c VELNOR S LAI s simply the most enjoyable adventure you wil play on your computer \({ }^{1}\)}

MINED OUT For Bill the worm Oric 1/Atmos \(£ 6.95\)
Following his success on the SPECTRUM, ELECTRON, BBC, LYN and DRAGON, BII the worm is now appearing in MINED OUT on the ORIC 1/ATMOS computers

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Fearless Fred the Intrepid Archaeologist, searches the creepy catacombs be ow the torrid tomb Tootrecarmoon'

\section*{COMING SOON}

\section*{GAMES 84 - Spectrum 48K}

From the advanced programming project division of the SOFTWARE STUDIOS - GAMES 84, an Olympia spectacular'

\section*{Mined-Dut 4BK orie/ Atmos es. 5}

Quicksi. หa, PO Box 6, Wm. boarne, Dorset 8Hzl 3PY
A walcome change from spwce Wars, Mined-Out requires more bran than brawn and one false move can lead to disuster. You are stupted at the start of a mintield over which you puest carctilly pick your way to reach the rext level. The smag it thal you cannpt see the mines and you only have ofte chanse, All is not lost, however, since yous hnow if one, two or three mines lee next to you and by getuing the old grey matter working, it is poosible to Find a safe path.
As you progrest, vafiouts complicatrons atise but uktimate suecess is achueved when you

\section*{reach level 1 and are permatied io} rescue the fampus star Bill the Worm. A neat reply fasilut is ancluded for all us failures.

A clever garue, timple to park up, bul requing skill 10 master. For more thoughrful players it shoutd provide fome hours of diversion

My only qubbles are that only - fast load verstasi is avalatic and the iniay card, although amusing, did now describe the garme very accurately. P.S.W.
insitatrionts
playabality
grapites
valur for matrey
F 90

Gatecrasher 48K Spectrum E6.95

Quiksslas, PO Box 6, wimbourne Dorsel HBPl 7 PY

No, il's not party ume! You meusi drop berrels into a maze of turnels, ifyras to get one barrel into each of the mane boxes at the base of the maze. However, the bastels look and sound fike bali beanngs'
If a barrel drops on to a gate it moves in the directron the gare is facirg and flips if over.

A bor witl empty If es second barred falls inso tt - and you're turnted to onaly 20 barrels per level, so study the maze carefully! You are able so totate the maze up or down and there's an earthquake learure which randomly aliers some of the

I evels five and six add a difficull twist, You musi sayl the barrels into numerictal order. If a barrel drops mion box it swops places wheh its neaghbour on the nglt.

The leys are user definable makins the bartel-dropping machure easy to comerol, it's interesteng that the seceer shol on the inlay Is from a different versholl of the game.

Enjoyable, simple at first bu: becoming much more dsficuls.

8 si
instructions
playabilsty
graphics
\(70 \%\)
kalue for moncy


\section*{Ugh1}

\section*{48K Spectrum E5.95}

Solfelk, \(12 / 13\) Henrsetia St, London WC2

Ihe lee Age is coming so Ugh's , fat to stiock up with food by Healing Piery the Peerodactyl's sugst Plerry, Rex the lyratioIsurus and Alison the alioraunis drop tonet on Lgh.
An Ugh you muat clmb the hitl fio get the eggr. You have an unlimated umount of speats in your cive - but you can oaly neasry one al in ilme. When you pick up un esp you lenve yourself Acfencelew. Your purnuen ara slupid and would be ensy to - eveid if it mann't so difficell id move - to gel on to a different path you must press up of dowis wish left or हight und be lis exacily the rathit position. The pocks are aterurate so they're idifficult to zyond
Graphices ate encellens. Sioril and lives teft are dymaved on a tah el of storic, is keer ng with ? the prochistoric scenarces - game starts with an evie lent cutle sureen und uathelievabie nousd. The keys can the redefined, or you can bise a wide variery of loysticks
Unfortunatety, Lgh's last its 'appeal is. questionable because the 'maze' is tuny and there only appears to be one ucreen display

\section*{instruchors}
plavabily
value for money

\section*{All-action arcade aces}

\section*{These fun games are hot news. Test your arcade skill and experience against them}

\section*{Encounter CBM 64 E9.95}

\section*{Noragen}

Thus through you are awarded an This must be athout the best extras shueld and sent on to the arcade-styte game I have seen on next level.
the CBM Ga, It seems to be basted The sound is excellens and on an arcade game which realy makes the game interest ng isvolves shonting lias druwn Graphes are quite outstand. tanxs ing. The 3D display is fash, Encounter is in full colour smooth and ficker-free in ins game in whych you mus locase moverren, The explosions are and detroy flying zuwerrs. The spectectular as debris fles all over display 55 a 30 picture with rader before twinkling away. and stanners below. Cyctunders
on the battefield dellect shots insuructionis from borh yourself and the playability memy crafi. Sornetirnes missiles praphras home in on you. If you don't value for money deatroy them authediately they smash into your shreids.


Once you have kulled all your aemies on one level you may go through a gate to the next one. You wre propelled through

\section*{Horace Goes 5kiling Dragon 32 E5.95}

Melbourne House. Chureh Yard, Tring. Hetts HP23 5LU
Horace wans to go skang - but "the ska hul is on the ol her sulde of" A buyy road. He must erosn the pand to gel some skie then cross Brik to tackle she slalom course The first part, cromsing thed road, is rather like Frogrer, and the zecond patt bears comu resemblance to a cur race gumic. The trafice is fasa and furioun, and you need a lot of palsence and skill to reach the ski slone. The ofaphics are excellent, mone the best l've seen on the Drapon The traffic is very Eunvinctig, with stow mnvirg forries and speedv lise inurar. biken as weal its cass in ind trations The flags and fir trees in the seond stage are simpler but sitl very effecive. The sound is also giod, mand not over-lone for once.
The game can be played ubing the keyboard, or, preferably, a loystick. There are a few mfnor faults - the demonsiral on monde deseribed on the cassetie finlay didnti appear to exikt, and, there is a fauly lang delay before the game re-stasle after you lose, a life on the road. Overall, though, it's a good, entertaning game
instruct ens
playabl ly
graphics
graphics
wa ue for money

Now that summer's finally here, all the insects are out and about and making the most oil the warmer weather. So are you in thes game.
You are a caterpillar and you spend most of the lazy hazy days of summer eating leaves. Your particularly favourite patch is the mushroom patch.
Eating leaves makes you grow at a miraculous rate. You can almost see yourself expand - it's a good thing that doesn's happen in real ffel You must avoid bumpang into your own body or colliding with mushrooms, or you'li lose one of your three lives. Once all your lives have been used up, the game ends.

Another obstacle to beware is the hedge bordering the

\section*{How it works}

10 go ahead to print instructions 15-60 first set of varlables sec-up 70 clear screen
80 see screen colour to black
\(90-110\) tel texl to while
120-150 deline colours
160-240 define characters
250-320 second set of variables

\section*{sel-up}

330-360 hedge displayed
\(370-400\) score printed
410-440 paich number prinied
\(450-4100\) number of lives pransed
\(490-610\) mushrooms displeyed
620-710 lenver displayed
\(720-730\) display caterpillar
740 check caterpillar posiuon
750 check keybonrd
\(760-800\) theck for movement
810-1120 deline new screen pasitions
1150-1160 check new screen positions
1170-1180 display caterpilar in new posillons
1190-1220 check new screen positions
\(1230-1300\) you've emten a leaf
1310-1580 a patch is completed
1590-1650 you bumped into your own body
1660-1700 you hit a mushroom
1710-1800 yout went into the hedge
1810-1840 display number of remaming lives
1850-1930 have you run out of lives?
1940.2200 end of game

2210-2240 display score and screen messages
2250-2370 display instructuons

\title{
The more more you
}
mushroom patch. If you touch it the gane ends.
Your firss patch has 20 mushrooms and 10 leaves. Once you finish a patch, you move on to a new one with five more mushrooms and one more leaf. Thus makes each patch harder than the one before.

Control the caterpillar with the four cursor keys, keeping the alphe-lock button down. If you find the game too fast, stop the caterpilar moving by holding down any other key apart from the cursor keys.

Your score, patch number and number of lives are constantly displayed at the top of the screen You score 10 points for each leaf you eat, and whenever you complete e patch you gef a bonus score. The bonus depends on which paich you've completed ind how many of your lives are left.

At the beginning of the game simple instructions are displayed, but if you decade to play agan al the end of a game, the instructions won't be repeated.

\section*{Yanalis}

NOM number of mushrooms
NOL number of leaves
PAT patch aumber
LI number of lives
SC score
0 detect postion of caterpiliar
COT change text to white
J,F,A,B,O,P used to move caterpillar
LEAF number of leaves caten
CHAR shape of caterpillars
Ms hold screen messages and - 1

MD/MA postaons of M5 MLSH display required number of mushrams
\(\mathbf{Y} / \mathbf{X}\) prations of leaver and mushrooms
WM1 check postions of mushrooms tops
WM3 check posituons of muthrooms stalks
L.EA display required number of leaves
WAL check posimons of leaves
NOKD elear screen
DELAY produce short delay
NU change colour of cater pillar"s body
V change volume of sound
NUCD clear screen
50 change musical notes display screen messages
2 REM *CRTERPILLAR CRAUL*3 REM * BY *
4 REM * STUART LENKER *
5 REM * 25TH APRIL 1984 *
6 REH * *
3 REM * HIGH-SCDRE 2870 *
8 REM * BY JULIETTE *

10 GUSUB 2250
\(15 \mathrm{NDM}=20\)
20 NRL=10
\(30 \mathrm{PAT}=1\)
\(40 \mathrm{LI}=3\)
\(50 \mathrm{SC}=0\)
\(60 Q=32\)
70 CALL CLEAR
80 CALL SCREEN(2)
90 FOR CDT=1 TO 8
100 CALL CDLOR (CDT, 16,1)
110 NEXT CDT
120 CALL CDLDR(13,13,1)
130 CRLL CDLDR(14,16,1)
140 CALL CDLDR(15,7,1)
150 CALL CDLDR(16,11,1)
160 CALL CHARC128, "RA55AR55AA55A
f155")
170 CALL CHAR 129, "081C3ETFPF3EO
808")
130 CALL CHAR(136,"18183C3C7E")
190 CRLL CHAR(144, " 000000183 CTEF
FFF日
200 CALL CHAR ( \(152, " 3 C\) PEFFFFFFFF?
E3C")
210 CALL CHAR(153,"814224183CF゙E?
E3C")
220 CALL CHAR (154, "3C7ETE3C18244
281")
230 CALL CHAR (155, "0162F4F8F8F4
201")
240 CALL CHAR ( 156 , "80462F1F1F2F4
680")
250 . \(1=0\)
\(260 \mathrm{~F}=1\)
270 A=4
\(280 \mathrm{~B}=2\)
\(290 \mathrm{D}=1\)

Pare 24 HOME COM.

\section*{PROCRRW}
you eat, the
```

770 IF X=83 THEN 810
780 IF }X=68\mathrm{ THEN 890
790 IF X=69 THEN 970
800 IF X=88 THEN 1050 ELSE 720
810 B=B-1
820 F=0
830 J=-1
840 P=-1
850 [=0
860 CHAR=156
870 CALL GCHAR(A,B,Q)
880 GDTD 720
890 B=B+1
900 F=0
910 J=1
920 P=1
930 D=0

```

```

300 P=0
310 LEAF=1
320 CHAR=154
330 CALL HCHAR(2,1,128,32)
340 CALL HCHAR(24,1,128,32)
350 CALL YCHFR(2,1,128,23)
360 CFLLL VCHAR(2,32,128,23)
370 M$="SCDRE-"&STR$(SC)
380 MD=1
390 NA=1
400 GDSU8 2210
410 M$="PATCH-"&STRW(PAT)
420 MD=1
430 MA=13
440 G0SUE 2210
450 ME="LIVES-"&STR$(LI)
460 MD=1
470 MA=23
480 Gप\$|В 2210
490 FOR MUSH=1 TD NDM
500 RHNDCMIZE
510 X=INT (31*RND)+1
520 IF X<3 THEN 510
530 Y=INT<22*RND)+1
540 IF Y=1 THEN 530
550 CALL GCHAR(Y, X, 则1)
5 6 0 IF WM1<\32 THEN 500
5PO CALL GCHAR(Y+1, %,WM12)
580 IF WM2<>32 THEN 500

```

```

600 CALL HCHAR(
610 NEXT MUSH
620 FOR LEA=1 TD NDL
6 3 0 ~ R A N D O M I Z E ~
640 X=INT (31*RND) +1
650 IF X<3 THEN 640
660 Y=INT (23*RND) +1
6 7 0 ~ I F ~ Y = 1 ~ T H E N ~ 6 6 0 ~ 0
680 CALL GCHAR(Y,X,WAL)
690 IF WAL<\32 THEN 630
700 CALL HCHRR(Y,X:129)
710 NEXT LEF
720 CFLLL HCHAR(A,B,CMAR)
730 CALL HCHAR(A-F,B-J, 152)
740 IF Q<>32 THEN 1190
750 CALL KEY(O,X,Y)
70 IF Y=0 THEN 1130

```

\section*{Hints on conversion}

If your are going to try and convert this program to another machne, then remember the following poisls

1 The Texns has - 24 by 32 graphte tcreen
2 It has a 24 by 29 text screen
3 It uses user-defined graphes
A pood emount of space can be saved by using multiple line statements. Below are the more unustiol commands.

CALL CHAR (ASCII code number, hexadecimal tring) Defines characiefs used in the progrars. The hexadecimal aring describes the partern to be guven to the character with ASCII code ?

CALL ACHAR (row mumber, column number, ASCII code, number of repentions) Praces character on screen all row and column specified, and repents it horizontally the number of times stated. If thas fourlh value is omitted then the characier is displayed onty once. The character used as the one whose ASCII code appeary in the command

CALL, FCHAR (rov number. column number. ASCII code, number of repeiunans) Works the same why as CALL HCHAR only repeats vertically instead of horizontally.

CALL CCHAR (row number, coltamn number, numerteal varimbic) Equivalent of PEFK; assigns ASCll code of character at row find columin stated lo numerical variable

CALL CLEAR Clegrs the sereen. Equavaient to CLS.

CALL SCREEN (colour code) Specilies sceeen colour, using colour code.

CAIL COLOUR (characier set number, foreground colout code, background colqur code) Specifies forecround and background colours for all characters ith sem stated.

CAIL SOUND (duration, frequency, volume) Produces sound with duration, Irequenty, and volume spectiled, Duration sin milliseconds, frequency in Hertz and volume in scale from 0 (latudest) to 30 (quietest),

CALL KEY ( \(k\) cy untt, \(k, s\) ) Equt valent of JNKEYS or GET, Returns code if key pressed in varsable k

These are the 16 cofours'

\section*{1 transparen}

2 black
3 medum green
dight green
5 dark blue
- Jught blue

7 dark red
- Cyan

9 medium red
10 light red
11 dark yellow
12 Light yeilow 13 dark green
14 magenta
15 grey
16 white
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950 CALL GCHAR (A,B,0)
960 GDTU 720
\(970 \mathrm{H}=\mathrm{A}-1\)
\(980 \mathrm{~F}=-1\)
\(990 \quad 0=0\)
\(1300 \mathrm{P}=\)
1010 D
1030 CALL GCHAR (A, B, Q)
1040 GDTV 720
\(1050 \mathrm{~A}=\mathrm{A}+1\)
\(1060 \mathrm{~F}=1\)
\(1070 \mathrm{~J}=0\)
\(1080 \mathrm{P}=0\)
\(1090 \square=1\)
1100 CHAR \(=154\)
1110 CALL GCHAR(A,B,Q)
1120 GDTD 720
\(1130 \mathrm{~B}=\mathrm{B}+\mathrm{F}\)
1150 CALL GCHAR (A, B, Q)
1160 IF Q<>32 THEN 1170 ELSE 720
1170 EALL HCHAR (A, B,CHAR)
1180 CALL \(\operatorname{HCHAR}(A-F, B-J, 152)\)
1190 IF \(\mathbb{Q}=129\) THEN 1230
1200 IF \(Q=128\) THEN 1710
1210 IF \(Q=152\) THEN 1590
1220 IF ( \(Q=136)+(Q=144)\) THEN 1660
1230 CALL SDUND \((99,-1,2,320,0,55\)
0,3 )
1240 SC=SC+10
1250 LEAF=LEAF +1
126 Q \(=32\)
1270 Mis = TR. (SU)
\(1200 \mathrm{MD=1}\)
1300 GロSUB 2210
1310 IF LEFF=NDL+1 THEN 1320 ELS E 720
1320 CALL SUUND (100,440, 0,540,2)
1330 CALL \(5 \square J N D(100,550,0,650,2)\)
1340 CALL SDUND ( \(100,440,0,540,2\) )
1350 CALL. SDUND ( \(100,660,0,760,2\) )
1360 CHLL SDUND \((100,880,0,980,2)\)
1370 FUR NUCD=3 TU 23
1380 CALL RCHRR (NUCD, \(2,32,30\) )
1400 M \(\$=\) "WELL DINE-FATCH
PAT)\&" CDFPLETED"
\(1410 \mathrm{MD=5}\)
1420 MA=2
1430 GOSUB 2210

\(1450 \mathrm{MD}=\) ?
```

1460 MA=10
1470 GOSUB 2210
1480 SC=SC+(FHT*LI*10)
1490 M$=STR$(SC)
1500 MD=1
1510 MA=7
1520 GDSUB 2210
1530 PAT=PAT+1
1540 NDL=9+PRT
1550 NDMM=NDM+5
1560 FDR DELRY=1 TD 500
1570 NEXT DELAY
1580 GםTD 70
1590 CALL SDUND(600,110,30,110,3
0,500,30,-8,0)
1600 FDR NU=1 TD 6
1610 CALL COLOR(16,7,1)
1620 CALL COLDR(16,11,1)
1630 NEXT NU
1640 LI=LI-1
1650 GOTD }181
1660 FOR Y=0 TD 30 STEP 2
1670 CALL SOUND (-99,-6,4)
1680 NEXT Y
1690 L.I=LI-1
1700 GOTD 1810
1710 FOR V=30 TO 0 STEP -1
1720 CALL SLUND(-250,-2,Y)
1730 NEXT V
1740 FOR V=0 TD 30
1750 CALL SDUND(-500,-2,N)
1760 NEXT Y
1770 FOR NUCD=3 TD 23
1780 CALL HCHAR(NUCD, 2,32,30)
1790 NEXT NUCD
1800 GOTD 2050
1810 MS=STRS(LI)
1820 MD=1
1830 MA=29
1840 GOSUB 2210
1850 IF LI<1 TMEN 1940
1860 D=0
1870 P=0
1880 Q=32
1890 CALL HCHAR(\&,B,CHAR)
1900 CRLL HCHRR(A-F,B-J,152)
1910 CALL KEY(0,K,S)
1920 IF S=0 THEN }191
1930 GOTD 720
1940 FOR SD=150 TO 110 STEP -1
1950 CALL SQUND(-100,SD,0)
1960 NEXT SD
1970 FOR NUCD=3 TU 23
1980 CALL HCHPR (NUCD,2,32,30)
1990 NEXT NUCI
2050 MS="GAME पVER"
2060 MD=?

```
```

2070 MA=11
2060 5DSUB 2210
2090 MS="YGUR FINHL SCORE IS "\&S
TRW(SE)
210n MD=11
2110 M\&=5
2120 GOSUE 2210
2130 HS="PRESS O' TG PLF'Y AGHIN"
2140 MD=16
2150 MA=5
2160 505118 2210
2170 GFLL KEY(O.K.O)
2180 IF S=0 THEN 2170
2190 IF K=39 THEN 15 ELEE 2200
2200 END
2210 FOR I=1 TO LEFaMS
2220 CALL HCHAR(MD, MHA+I,ASCRSEGE
(ME,I,1))
2230 NEXT I
2240 हETUPN
2250 CALL CLEAR
2260 CALL SCFEEM(2)
2270 FDR CDT=1 TO 8
2280 CPLL C[LDR(CDT,16,1)
2290 NEXT CIT
2300 PRINT TAB(5): "CATERPILLAR C

```

```

::!:
2310 FRINT "MIVE THE CATEFPILLRR
AROUND"::"THE MUSHRODM PATCH,WH
ILE"::
2320 PRINT "ERTING THE LEAVES AN
IL"::"DODGING THE MUSHRDOMS."::
2330 PRINT "FVOID THE SURRCUMDIN
G HEDGE,"::"FND YIUR DUN EDDY.":
::
2340 PRINT "PRESS FNY KEY TI CDN
TINUE"
2350 CFLL KEY`O,K,S)
2360 IF S=0 THEN 2350
2370 RETURN

```


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\section*{COMMODORE}
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